
THE IMPACT OF INTERNAL AUDITING ON STRATEGIC VIGILANCE IN ECONOMIC INSTITUTIONS «SONELGAZ CASE STUDY»

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Abstract

This study investigates the impact of internal audit on the practice of strategic vigilance in economic institutions. Internal audit holds a prominent position in most institutions due to its association with the highest levels of management. It functions not only as a supervisory tool but also as an independent and objective source of confirmation and advisory services, ultimately contributing to the institution's value creation. In the face of rapid global developments and advancements in research and communication technology, economic institutions strive to stay ahead by enhancing their information programs and implementing vigilance systems across all sectors. These efforts lead to improved profitability for customer services. Reviewing information systems is a crucial modern activity that ensures the system's effectiveness and credibility. To achieve this objective, a descriptive-analytical approach was employed. A scientifically designed questionnaire was distributed to the study population, which comprised a sample of institutions from the National Electricity and Gas Distribution Company in western Algeria. The researcher's key finding is that internal audit plays a critical role in assessing the effectiveness of internal audit operations on enhancing and utilizing strategic vigilance. Strategic vigilance is considered an essential mechanism for improving service quality and providing necessary information for optimal organizational decision-making.

Keywords: Audit; Internal Auditing; Strategic Vigilance; SONELGAZ

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1. Introduction

In recent years, institutions have witnessed significant changes in their economic, social, and cultural environment, the globalization of markets, which has been further amplified by globalization, evolving customer preferences and increasingly diverse demands, which has left the economic institution encountering significant challenges that impede the implementation of its strategic plans and objectives. Hence, the necessity has become urgent to develop a variety of control mechanisms applied within the organization, including internal audit.

Internal audit is considered one of the most important pillars on which the regulatory systems within the institution are based, which relies on employing personnel who have relevant academic qualifications and strong professional expertise, and complete objectivity in expressing their views and preparing comprehensive reports to address them and communicate them directly to relevant stakeholders with the aim of ensuring the accuracy and effectiveness of the systems and procedures applied within the institution.

Strategic vigilance is a continuous process that involves gathering and analyzing information about the economic, market, and competitive landscape. Its primary objective is to empower companies with the knowledge needed to make informed strategic decisions. Strategic vigilance contributes to a company's competitive edge by providing a comprehensive understanding of potential market opportunities and risks. Information and knowledge are considered critical resources for organizations seeking to achieve their goals and objectives, ultimately allowing them to maintain a sustainable position in a constantly evolving competitive market.

Strategic vigilance in the context of Algerian economic institutions refers to the ability to understand and analyze both the local and global economic environment. This understanding is then leveraged to make informed strategic decisions aimed at enhancing financial and competitive performance, ultimately contributing to achieving sustainable economic development in Algeria, alongside other countries.

The importance of studying the relationship between internal audit and strategic vigilance is underscored by the following research question: To what extent does internal audit affect the performance of strategic vigilance in economic institutions?

In order to address this main research question and any sub-questions emerging from it, the following hypotheses are formulated:

First Hypothesis: There is a positive correlation between internal auditing practices and its dimensions, and strategic vigilance in economic institutions.

Second Hypothesis: There is a significant impact of internal auditing practices and its dimensions on strategic vigilance in economic institutions.

This study addresses a contemporaneous topic, contributing new insights to the internal systems of economic institutions. It investigates the effectiveness of internal audit

operations in influencing the application and utilization of strategic vigilance within these institutions.

The primary objective of this study is to determine the extent to which internal audit impacts the use of strategic vigilance in economic institutions. This will be achieved through the following sub-objectives:

- ✓ Define internal audit concepts, its significance, and objectives.
- ✓ Explain the concept of strategic vigilance, its components, and importance.
- ✓ Develop recommendations to support economic institutions in achieving their strategic objectives and enhance their ability to navigate complex environments.

2. The theoretical framework of internal audit

Internal audit definitions have varied and evolved over time. However, the Institute of Internal Auditors (IIA) issued more stable definitions in 1999. Previously, the IIA defined internal audit in 1947 as "the impartial, evaluative activity that takes place within an organization with the intention of reviewing accounting and financial operations as a basis for providing preventive management services. (Al-Ramli, 1994)". In 2001, a new guide to practicing the internal audit profession was formulated, and internal auditing was defined as an independent and objective assurance activity, designed to improve organizational effectiveness and efficiency. It helps the organization achieve its goals by creating an organized and accurate approach to evaluate and improve the effectiveness of risk management, control and guidance processes (Al-Wardat, 2006). Internal Audit is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps the organization achieve its objectives by bringing a structured and disciplined approach to evaluating and improving the effectiveness of risk management, control, and governance processes (university of california, 2024).

The internal audit function is considered one of the most important functions that characterize modern companies. Some researchers even suggest that one year of internal auditing provides the equivalent value of three years of external auditing. The importance of internal audit lies in its ability to add value. As the definition provided by the Institute of Internal Auditors (IIA) emphasizes, internal audit contributes to value creation by improving and increasing the chances of achieving the organization's objectives, improving procedures and processes, and reducing risks to acceptable levels, through its advisory and assurance roles.

The internal audit process is defined by the services it provides. As an integral part of an organization's core functions, internal audit reports to senior management. Here's a breakdown of the key services offered (Saraya, 2007):

- **Preventive services:** These involve a set of procedures used by the internal auditor to protect the organization's assets and property from theft, embezzlement, and waste. Additionally, they safeguard organizational policies from unauthorized changes.
- **Evaluation services:** Evaluation services involve a set of methods and procedures established by the internal auditor to assess the effectiveness of the organization's internal control system.
- **Structural services:** Structural services provide consulting support to management by offering information for improving the various systems established within the organization.
- **Remedial services:** Remedial services involve a set of methods used by the internal auditors to address any errors discovered during their duties. They also include recommendations in their reports for correcting deficiencies in the organization's various systems.

Initially, the primary goal of internal audit was to detect errors, fraud, and manipulation. These goals have evolved to include determining the accuracy and credibility of financial and operational information, ensuring compliance with external regulations and laws, promoting the efficient use of resources, and helping company departments carry out their responsibilities efficiently and effectively by providing them with relevant analysis and information.

As the importance of internal audit has grown, internal auditors have expanded their focus to include the following objectives:

- Apply accounting and financial controls to operations, aiming to improve effectiveness while minimizing costs.
- Verify the adequacy of asset protection measures.
- Ensure the reliability of financial statements prepared for management.
- Develop recommendations to improve the organization's work systems and internal controls, ultimately enhancing employee performance.
- Evaluate the effectiveness of substantive plans, policies, and procedures.
- Safeguard the accuracy of accounting information.

4. Strategic vigilance

Strategic vigilance leverages modern technologies and advanced information systems to provide organizations with insights into their environment, enabling them to manage and monitor various risks and threats. Ribault defined strategic vigilance as the comprehensive and systematic monitoring of an organization's environment, involving the analysis of both current and future-oriented information to identify potential risks and opportunities (Harmel, 2007).

Vigilance: This is continuous monitoring and observation of the organization's surroundings in order to obtain the information required in order to make the best decisions (Filali & Boshikhi , 2018).

Strategic vigilance is the essence of economic intelligence because it provides valuable information to decision-makers and corporate managers. This allows them to monitor and understand the organization's environment, make optimal decisions, and improve competitiveness and innovation. Strategic vigilance involves systematically monitoring markets, competitors, and technology sectors, analyzing the collected data, and understanding how information is collected and used. It also emphasizes disseminating useful information to various economic actors. In essence, strategic vigilance identifies the ongoing activity of gathering and analyzing all signals that convey information relevant to the company in the strategic field (Iman, 2020).

As for Humbert Lesca, who is considered one of the largest and most famous researchers in the field of strategic vigilance, he sees strategic vigilance as “a continuous collective action through which a group of potential changes in the environment takes proactive measures to create job opportunities and reduce the risks of failure certainty (Mahdi & Masoudi, 2020).”

Strategic vigilance plays an important role in the economic intelligence system. Its role can be summarized in four key functions (Hani, 2019):

- **Early identification:** This involves anticipating competitor activity and environmental changes.
- **Discovery:** This function focuses on discovering new or potential competitors and organizations that could be partners or acquisition targets, ultimately leading to the identification of market opportunities.
- **Monitoring:** This involves monitoring developments in competitor offerings, market trends, technology, regulations, and production methods relevant to your activity.
- **Learning:** This function is about learning the characteristics of new markets, as well as the mistakes and successes of competitors, to facilitate project evaluation, develop new management styles, and build a unified view for managers.

4. The reality of internal audit and strategic vigilance in the Electricity and Gas Corporation SONELGAZ

Founded in 1969, SONELGAZ, the historical operator in the field of electricity and gas supply in Algeria, has been serving Algerian citizens for over half a century by providing them with essential energy for daily life. Following the implementation of the Electricity and Gas Distribution Law, SONELGAZ transitioned from a single, all-encompassing

company to a holding company that oversees a diverse group of subsidiaries and joint ventures.

SONELGAZ has always played a major role in the country's economic and social development. Their contributions include major programs like rural electrification and gas distribution initiatives. These efforts have resulted in an electricity coverage rate of 98% for 10,983,538 customers and a gas penetration rate of 65% for 6,886,407 customers. Today, the Sonelgaz Group consists of 12 subsidiaries directly managed by the holding company and 13 joint ventures (sonelgaz.dz, 2023).

The internal audit activity of the SONELGAZ complex has been decentralized to the company level. A roadmap for this decentralization was approved by the SONELGAZ Executive Committee on July 4, 2021.

This decision aims to establish closer oversight ("neighborhood control") of the complex's various activities, leading to greater efficiency and cost control. SONELGAZ's central audit activity will refocus on high-value strategic audits, providing an objective and accurate assessment of governance practices that could pose significant risks to the complex. This includes a particular emphasis on risk mapping activities.

Steps for assigning the internal audit task: It goes through several stages, which are:

Pre-Audit Tasks:

- **Task Duration:** The time required for an internal audit assignment varies depending on the complexity of the subject matter, the time needed to collect and analyze data, and the level of adherence to auditing standards and regulations.

Determining Audit Objectives:

- Audit objectives are typically based on the area being audited, whether it's accounting, commercial operations, or another function. Common internal audit objectives at SONELGAZ include:
 - Management controls over invoices.
 - Effectiveness of the information system in terms of data monitoring and production support.
 - Existence of guidelines for the new billing system that allow for comprehensive tracking and monitoring.

Audit Execution and Reporting:

- After defining the objectives, the audit team performs the necessary procedures through a planning process. This includes identifying and analyzing potential issues within the framework of internal control evaluation. The findings are documented in a report that outlines:
 - The identified problem.

- The evaluation procedures performed.
- The associated risks.
- Root causes of the problems.
- Recommendations and suggestions for improvement.
- Inventory (if applicable).
- **Internal Audit Report:** The internal auditor prepares a draft report that includes an index, introduction, and summary of the audit findings. This draft is then reviewed and finalized by the audit team before being presented at an approval meeting. The final report is a communication tool used to share audit findings with relevant stakeholders.
- **Follow-up on Recommendations:** To ensure the effectiveness of the audit, the internal auditor follows up on the implementation of recommendations included in the report. This typically involves sending a response to the organization's management that details the progress made on addressing the identified issues.

Benefits of Internal Audit:

An effective internal audit function offers several benefits to an organization, including:

- **Risk Management:** Internal audit helps identify and assess potential risks and provides recommendations to safeguard physical and information assets.
- **Process Improvement:** The audit process helps identify areas for improvement in operational plans and ensures their effective implementation.
- **Fraud Detection:** Internal audit can contribute to detecting fraudulent or manipulative activities within the organization and recommend preventive controls to mitigate fraud risks.

ELIT SPA: Information Technology Solutions for Algeria

ELIT, an Algerian IT company with over 300 engineers and 40+ clients, specializes in information and communications technology (ICT). They boast a secure and highly available infrastructure and offer a range of services, including:

- **Network and Web Development:** ELIT designs, develops, and manages computer networks and websites.
- **Email Solutions:** They provide secure email services for businesses.
- **State-of-the-Art Security:** ELIT utilizes advanced security platforms to safeguard information systems.

Serving the SONELGAZ Group:

ELIT plays a critical role in supporting the IT needs of companies within the SONELGAZ group. Their responsibilities include:

- **IT Needs Assessment and Solutions Implementation:** ELIT analyzes IT requirements and implements customized solutions for SONELGAZ subsidiaries.
- **IT Resource Management:** They manage and operate IT resources to ensure the expected service level for SONELGAZ's IT units.
- **IT Strategy and Project Management:** ELIT develops the group's overall IT strategy and oversees the implementation of its component projects.
- **IT Policy and Guidelines:** They define and establish the IT policies and guidelines for the SONELGAZ group.
- **IT Optimization and Standardization:** ELIT works to optimize IT resource usage and implement standardized processes within the group.
- **Media and Communication Technology Policies:** They develop policies for information systems, media, and communication technology (MCT).
- **Automated Media and Communication Solutions:** ELIT provides solutions to meet the automated media and communication needs of SONELGAZ companies.
- **Information System Development and Implementation:** They develop and implement information systems for managing various complex activities.
- **IT Infrastructure and User Support:** ELIT provides the necessary hardware, software, and facilities to support automated information and communication within SONELGAZ companies. They also ensure the supervision and maintenance of these systems and platforms.
- **Secure Information Access:** ELIT prioritizes user access to information and programs while maintaining data safety, validity, and security.

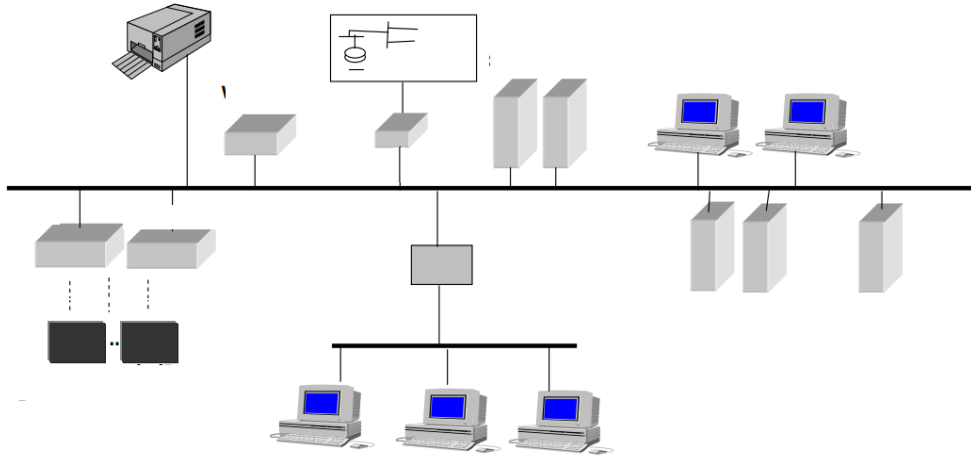
5. Strategic vigilance and its role in improving the services provided by the Electricity and Gas Corporation SONELGAZ Group

Remote control systems are a critical component of strategic vigilance in electrical networks. These systems enable:

- **Enhanced Grid Control:** They provide real-time monitoring and control of electricity networks, promoting efficient operation and reducing power outages.
- **Optimized Load Balancing:** They dynamically redistribute electrical loads to ensure efficient power distribution throughout the grid, balancing the demands of main feeders and substations.
- **Improved Power Quality:** By optimizing grid management, remote control systems contribute to delivering consistent and reliable electricity to customers.

Additionally, these systems connect and control main stations through a centralized monitoring and control room. They also play a crucial role in gathering data for future planning and development of the electrical system.

Figure 1 Typical form of control system

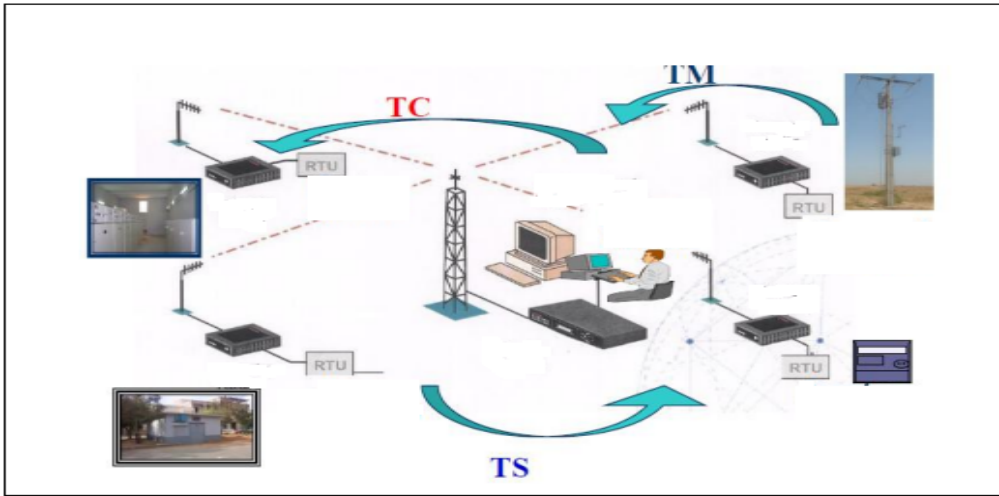


Source: SONELGAZ group

The main functions of the console

- Backup power supply for conversion and conversion equipment.
- Manage local and remote switch control.
- Detecting the fault current between the phases or the neutral phase.
- Measure voltage and current.
- Detecting the absence of effort.
- Automatic switch opening.
- Configuration data (save, restore or modify configuration).
- Download software update.

Figure 2 Principle of control system in electrical networks



Source: SONEGAS group

Objectives of the Remote Control System:

- **Enhanced Fault Detection and Management:** The system provides real-time awareness of faults in the electrical network, allowing for remote control of switches in substations. This streamlines fault response and minimizes downtime.
- **Efficient Alarm and Event Management:** The system facilitates the management of alarms and events triggered within the network, enabling operators to focus on critical situations.
- **Improved Monitoring and Diagnostics:** The system allows for remote resetting of fault detection devices and measurement of current or voltage, providing valuable data for system diagnostics.

Economic Benefits:

The remote control system plays a vital role in improving the institution's economic performance. By:

- **Reducing Unsold Energy:** The system minimizes energy losses, leading to significant cost savings.
- **Enhancing Customer Satisfaction:** Minimized outages prevent disruptions for customers, protecting their equipment and improving service quality.
- **Optimizing Investments:** Reduced outages extend the lifespan of electrical equipment, lowering investment costs.

These factors combined contribute to a positive return on investment for the institution.

6. The role of strategic vigilance in economic profit and improving services provided by electricity distribution institutions

This study was conducted on part of the medium electrical network (HTA) of the Electricity and Gas Corporation of the state of Camp. In this context, we shed light on the extent to which the remote control system contributes when a series of power outages occur, and the effectiveness of this system, which is considered one of the elements of vigilance. Technology improves the services provided by the institution under study, by conducting a simulation of the operation of this system in a specific period of time.

The first case: Study of undistributed (unsold) energy in the absence of a remote control system: In this case, we studied the power outage during multiple periods in a group of residential neighborhoods that are about 50 km away from the control center, where the corporation sends specialized agents to intervene in order to close the electrical circuit breaker and return it to normal mode, and to calculate the time period of the power outage and the cost of the so-called With unsold energy, several factors are involved, which we will explain in the following tables:

Table 1 represents the time period of a power outage in the absence of a control system in the time period studied

Duration (hour)	Cutter number	timing	Cutter closing hour	Cutter opening hour	Font name	the date
1	J511	01:00:00	19:08:37	18:08:37	A-F	15/03/2023
1.00	J511	01:00:28	17:49:37	16:49:09	A-F	01/04/2023
1,01	J511	01:01:11	20:57:48	19:56:37	A-F	27/06/2023
1,01	J511	01:01:12	01:03:43	00:02:31	A-F	30/07/2023
1,01	J511	01:01:19	17:20:50	16:19:31	A-F	04/08/2023
1,01	J511	01:01:17	15:48:33	14:47:16	A-F	15/08/2023
6,05						

Source: Simulation of remote control system numbers.

It is clear from the table above that the time period for unsold energy during these power outages on the dates indicated in the table is estimated at 6 hours and 5 minutes in the absence of a remote control system.

Table 2 The estimated amount in dinars of undistributed energy in the same period studied in the absence of a control system.

Total power (in kW)	1960
Duration of power outage (hours)	6,05

Undistributed energy	11858
Value in dinars 1KWH 4---- DA	47432
The value of the intervention duration = 9302.32da / h	56279,04
The total estimated amount in dinars for undistributed energy	103711,04

Source : Simulation of remote control system numbers

The second case: Study of undistributed (unsold) energy with a remote control system in the institution

Table 3 Duration of undistributed energy with the presence of the control system in the time period studied

Duration (hour)	Cutter number	timing	Cutter closing hour	Cutter opening hour	Font name	the date
0,25	J511	00:01:25	18:09:32	18:08:37	A-F	15/03/2022
0,18	J511	00:00:18	16:49:37	16:49:09	A-F	01/04/2022
0,11	J511	00:01:11	19:56:48	19:56:37	A-F	27/07/2022
0,12	J511	00:01:12	00:02:43	00:02:31	A-F	30/07/2022
0,19	J511	00:01:19	16:19:50	16:19:31	A-F	14/08/2022
0,17	J511	00:01:17	14:47:33	14:47:16	A-F	03/10/2022
1,02						

Source: Simulation of remote control system numbers

The table demonstrates that the remote control system significantly reduces unsold energy during outages. The estimated downtime for unsold energy during the listed outages is minimal, at only 1 minute and 2 seconds.

Table 4 Calculating the estimated amount in dinars for undistributed energy in the same period studied with the presence of the control system.

Total power (in kW)	1960
Duration of power outage (hours)	0.017
Undistributed energy	33.32
The total estimated amount in dinars for undistributed energy	133.28

Source: Simulation of remote control system numbers

The table highlights the effectiveness of the remote control system (strategic vigilance) in minimizing unsold energy costs. Even with a short outage of 1 minute and 2 seconds, the cost is estimated at only 133.28 DZD.

Analysis of Economic Profitability:

Tables 2 and 4 reveal a significant difference in unsold energy costs. In the first scenario (without strategic vigilance), unsold energy costs account for a staggering 99.87% of the total cost, amounting to 103,711.04 DZD. Conversely, with strategic vigilance (second scenario), unsold energy costs plummet to a mere 0.13% of the total cost, at just 133.28 DZD. This dramatic reduction demonstrates the substantial economic benefit achieved by minimizing unsold energy through strategic vigilance (remote control systems in this case).

Analysis of Service Quality:

Tables 1 and 3 highlight the impact of strategic vigilance on service quality. In the first scenario (without strategic vigilance), the power outage lasted a significant 6 hours and 5 minutes. In stark contrast, with strategic vigilance (second scenario), the outage duration is minimized to just 1 minute and 2 seconds. This substantial reduction in outage time ensures minimal disruption for customers, protecting their equipment and investments. Ultimately, this translates to a significant improvement in service quality compared to scenarios without strategic vigilance.

7. Conclusion

This study investigated the impact of internal audit on strategic vigilance in economic institutions. The findings confirm a positive relationship between the two, with internal audit contributing significantly to strategic vigilance.

Key Findings:

- **Enhanced Information Systems:** Internal audit plays a crucial role in activating and optimizing the organization's information systems, ensuring access to reliable data for informed decision-making.
- **Effective Planning and Implementation:** Internal audit helps implement plans through the audit process and ensure their successful execution, promoting operational efficiency and alignment with strategic objectives.
- **Audit Independence and Information Access:** For effective strategic vigilance, maintaining auditor independence during audits and ensuring complete information access are critical.
- **Strategic Vigilance for Timely Information:** Strategic vigilance is essential for organizations to gather and provide necessary information at the appropriate times, enabling proactive decision-making.
- **Economic Profitability:** Strategic vigilance contributes to increased economic profit for the organization by identifying and mitigating risks, promoting operational efficiency, and informing sound business strategies.
- **Customer Satisfaction:** Achieving customer satisfaction is crucial for an economic institution's success. Strategic vigilance allows for the identification of

areas for service improvement, ultimately enhancing customer satisfaction and loyalty.

- Strategic Decision-Making in SONELGAZ: In the context of the Electricity and Gas Corporation (SONELGAZ), strategic vigilance empowers decision-makers to make informed strategic choices that benefit the enterprise.

Confirmation of Hypotheses:

- The study confirms the hypothesized correlation between internal audit and strategic vigilance in economic institutions.
- The hypothesized impact relationship between internal auditing and its dimensions on strategic vigilance in economic institutions is also verified.

The critical roles of internal audit and strategic vigilance necessitate continuous improvement. Here are key recommendations to address potential shortcomings:

- **Enhanced Staffing:** Increase the number of assistant auditors to support mission officials within the internal audit department. This will enhance efficiency and allow for more comprehensive audits.
- **Robust Internal Controls:** Implement a comprehensive and effective internal control system throughout the organization. This system will mitigate risks of fraud, manipulation, and wasteful spending, helping the organization achieve its goals ethically and efficiently. (Combine recommendations 2 and 6)
- **Auditor Qualifications:** Ensure the internal audit department is staffed with qualified professionals. Recruit auditors with academic qualifications in accounting and auditing, and ensure their familiarity with international auditing standards.
- **Information Access:** Guarantee the internal audit team has complete and timely access to all necessary information for a thorough audit process.
- **Strategic Vigilance Integration:** Expand the scope of strategic vigilance activities across all departments within the organization. This proactive approach will enable the identification and mitigation of potential risks before they escalate.
- **Training and Development:** Invest in training programs for employees, covering both strategic vigilance and internal auditing best practices. Regularly update training content to reflect advancements in these fields.

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